

the consumption is about equal to 56 tons of coal a month, or more than half a ton per month for each person in the Hospital, including patients and attendants.

(d.) *Imperfect Floors and Walls.*—In the wards of an hospital where patients subjected to a great variety of diseases are continually changing places there is nothing more essential than thorough cleanliness. This is easily effected as far as furniture and bed-clothing are concerned, but unless the floors, walls, ceilings, and other immovable parts of an hospital ward are so constructed as to be capable of being thoroughly cleansed from dust, which must necessarily carry with it the germs of disease, it is impossible to keep the wards surgically or medically clean. The floors in the wards are constructed of soft pine-wood boarding, and are much worn and full of open cracks. The joints are also very open, owing to shrinkage. An attempt has been made to improve their condition in some wards by the application of paraffine to fill the interstices; but it has not proved successful. In their present condition the floors seemed to be condemned by all the expert witnesses, Dr. Copland, the house surgeon, stating that they were as good contrivances as could be got for harbouring germs. The walls of wards Nos. 1 and 2 have been well finished in Keene's cement, and are sufficiently non-absorbent; but in the other wards, with the exception of the painted dado 4ft. from the floor, the walls are rough and absorbent, and are periodically coated with white-wash containing size. As pointed out by Dr. Truby King, this is very objectionable, size being the material which is used as a favourable medium for developing pathogenic germs for experimental purposes. Dr. De Latour found by analysis that the surface-matter on the walls of one ward contains a large percentage of organic matter, from which it should, under proper conditions, be entirely free. The ceilings have the same defects, being composed of plaster, which presents a highly-absorbent surface; and in the lower wards the beams that support the upper floor are exposed, and present a rough surface, showing the original saw-marks. Objection was also taken to the form of the mouldings and other fittings, which present angles and ledges upon which dust can collect.

(e.) *Overcrowding of Wards.*—The present average number of beds in each of the eight main wards is about fifteen, the number having been reduced of late years from eighteen. At present it is the practice to keep two wards empty, one in the male and the other in the female side, for the purpose of periodical cleaning, which necessarily crowds the patients to some extent in the other six wards. The wards are not always full, and the actual number of patients upon a certain date was ninety-two. The weight of evidence was clearly that this must be considered as an overcrowding of the wards. Dr. Truby King states with regard to No. 7 ward—which has been generally taken as the type ward throughout the evidence, seeing that it was there that the serious accidents occurred in Dr. Batchelor's cases—that sixteen patients—which was the number on 22nd July—in that ward would certainly run considerable risk, and that under present circumstances, even with the window-valves fully open, it should not have more than eight persons in it. The references to the proper amount of bed-space, floor-space, and cubic space which are required for an hospital ward, as compared with the amount provided in the Dunedin Hospital wards, are very fully set forth by several of the witnesses, and show that, although the Hospital is sufficiently large for the average number of cases, the present manner of allotting the space certainly leads to overcrowding. From long experience a proper standard has been arrived at on the following points which bear on this question of overcrowding: The cubic air-space, or, in other words, the share of atmosphere, provided for each patient; the amount of floor-space, or room for conveniences, for each patient; and the amount of bed-space, or the distance between the beds so as to prevent unpleasant and in some cases dangerous contact, and to allow a proper attention to the wants of the patients—all these matters are clearly set forth in the text-books, the proportional dimensions being given in each case. It was attempted to be shown that in such matters there is a theoretical and a practical standard, but in our opinion this is not a fair statement of the circumstances. It is rather that the best results cannot be attained in the economical treatment and for the comfort of the patients in an hospital without perfect provision being made, but under some circumstances the administration must be prepared to expect less perfect results, and trust to extra vigilance and precaution in the nursing and skilled treatment as a means of preventing epidemics and similar accidents. It is quite fallacious to suppose that there is one successful theory of safety and another successful practice of safety. From the evidence before us we are of opinion that with extra sanitary precautions, and by reducing the number of patients in the wards in proportion to the imperfect arrangements for ventilation, &c., and by the profuse use of antiseptics, even a very faulty hospital can be conducted with comparative safety to the inmates, although sooner or later the defective arrangements may manifest their influence almost without notice. Dr. Truby King points out that, while wards Nos. 6 and 7 as at present arranged should not with a minimum of safety have more than eight patients in each, if rearranged and perfected they could jointly provide accommodation for twenty-seven patients. The average number of patients in the Hospital may be taken from the evidence as about one hundred. Roughly speaking, the wards in the Dunedin Hospital provide 100,000 cubic feet of air-space. A distinction must be made between surgical and medical wards, the former requiring more room. The proportional division, from the best authorities, would provide for the treatment of forty-four surgical cases and fifty-six medical cases. This calculation only takes into account the east and west sides of the building, leaving out the north and south sides, which are at present devoted to administrative purposes. If properly ventilated, warmed, lighted, and made thoroughly "dust-proof," it thus appears that the ward-space is quite sufficient for the hospital requirements at the present time.

From the evidence we have taken it would appear desirable that in any future scheme for the rearrangement of the Hospital the following measurements should be adopted as nearly as possible: For medical wards, cubic space 1,500ft. for each patient, floor-space 100 square feet, and 8ft. width for each bed; and for surgical wards, 2,000ft., floor-space 130 square feet, and the bed-space 11ft.